

Chapter 6

Conservation Strategy

Longhorn Fairy Shrimp, Vernal Pool Fairy Shrimp, Midvalley Fairy Shrimp, and Vernal Pool Tadpole Shrimp

Many of the landscape- and community-level conservation measures will benefit and contribute to recovery of longhorn fairy shrimp, vernal pool fairy shrimp, midvalley fairy shrimp, and vernal pool tadpole shrimp. Development conditions will ensure that impacts on these species from covered activities are avoided or minimized (see Conservation Measure 2.2.3). The Preserve System will protect existing suitable habitat for covered shrimp species to the extent feasible (Conservation Measure 1.1.3). Priority will be given to acquiring sites with suitable habitat for vernal pool invertebrates, including rock outcrops and basins that provide suitable habitat for longhorn fairy shrimp. Information used to develop species habitat models were not sufficiently detailed to determine the distribution and quality of vernal pool habitat on lands considered for development or for preservation. Consequently, planning surveys (Conservation Measure 1.2.1) will be conducted to identify suitable habitat for covered shrimp species in potential preserve lands; results of these surveys will be used to guide acquisition of suitable habitat to the maximum extent practicable.

Under Conservation Measure 2.2.2, the Implementing Entity will restore up to 120 acres of seasonal wetlands in preserves (up to 88 acres of compensation and 32 acres of mandatory restoration to contribute to species recovery). If suitable sites are available, at least 10% of the mandatory restoration (up to 3.2 acres) will be northern claypan vernal pools that support covered vernal pool crustaceans. Restored vernal pools will be evaluated to determine if covered vernal pool crustaceans are present at frequencies similar to those in natural vernal pool complexes. If not, the Implementing Entity will assess the feasibility of transplanting species from occupied pools to restored pools to establish new populations.

The landscape-level and community-level measures are expected to protect some existing suitable habitat for covered shrimp species, as well as to minimize and compensate for impacts on all seasonal wetlands. However, the following species-level measures are necessary to supplement those measures. The following measures will ensure that impacts on vernal pools suitable for or occupied by vernal pool crustaceans are adequately avoided, minimized, and compensated for.

Measure 3.13.1. Avoid Impacts on Covered Shrimp Habitat to the Maximum Extent Practicable

To the maximum extent practicable, impacts on covered shrimp habitat as a result of covered activities will be avoided by implementing the following measures based on existing mitigation standards (U.S. Fish and Wildlife Service 1996b).

1. Establish a 250-foot buffer from the outer edge of all hydric vegetation associated with vernal pools and vernal swales. Alternatively, at the request of the project proponent, representatives of the Implementing Entity and USFWS may conduct site visits to inspect the unique characteristics of specific project sites and may approve reductions of the 250-foot buffer. Buffer reductions may be approved for all or portions of the site whenever reduced setbacks will maintain the hydrology of the vernal pool and achieve the same or greater habitat values as would be achieved by the 250-foot buffer.
2. Activities inconsistent with the maintenance of vernal areas within the buffers, including all portions of the onsite watershed, will be prohibited. Inconsistent activities include altering existing topography; placing new structures within the buffers; dumping, burning, and/or burying garbage or any other wastes or fill materials; building new roads or trails; removing or disturbing existing native vegetation; installing storm drains; and using pesticides or other toxic chemicals.
3. Buffers will be marked by brightly colored fencing or flagging throughout the construction process.
4. Construction personnel will participate in a USFWS-approved worker environmental awareness program. A qualified biologist approved by USFWS will inform all construction personnel about the life history of listed vernal pool invertebrates, the importance of avoiding their habitat, and the terms and conditions of the HCP/NCCP Implementing Agreement.

Measure 3.13.2. Conduct Preconstruction Surveys and Minimize Impacts on Covered Shrimp

If impacts on covered shrimp habitat as a result of covered activities cannot be fully avoided, the following measures will be implemented.

1. Preconstruction surveys will be conducted based on USFWS protocols (U.S. Fish and Wildlife Service 1996c) to determine presence or absence of each covered shrimp species within vernal pools or other wetlands. Modifications to current protocols may be implemented to streamline the review and permitting process if such modifications are approved by USFWS. For example, the standard protocol requires a 2-year survey to determine absence of listed shrimp species. Potential modifications could

include allowing a 1-year survey to determine absence, but requiring some mitigation even if covered shrimp are not found during the 1-year survey.

2. Filling of vernal pools will be delayed until pools are dry and samples from the top layer of vernal pools soils are collected. Soil collection will be sufficient to include a representative sample of plant and animal life present in the pools by incorporating seeds, cysts, eggs, spores, and similar inocula.
3. Collected soils will be dried and stored properly with the date and location of collection clearly recorded on each sample. Soils will be deposited with the preserve manager. The preserve manager will retain the soils in a cool, dry area and will be responsible for providing soils to vernal pool construction managers for inoculating newly created vernal pools on preserve lands.

Measure 3.13.3. Compensate for Impacts on Covered Shrimp Habitat

Measure

For purposes of this HCP/NCCP, if any habitat for covered invertebrates within a vernal pool complex is disturbed by a covered activity, then all habitat within the complex will be considered affected. Also, if any part of a vernal pool is disturbed by a covered activity, then the entire pool will be considered affected. If impacts on covered shrimp habitat as a result of covered activities cannot be avoided (Conservation Measure 3.13.1), compensation for loss of suitable habitat will be achieved by:

- preserving and managing in perpetuity 3 acres of suitable habitat within the Preserve System or dedicating 2 vernal pool credits (acres) in a USFWS-approved mitigation bank for each acre affected; and
- creating and managing in perpetuity 2 acres of suitable habitat within the Preserve System or dedicating 1 vernal pool credit in a USFWS-approved mitigation bank for each acre affected.

Under the preservation requirement, if a local mitigation site is selected, the site will be incorporated into the HCP/NCCP Preserve System and managed by the Implementing Entity to support or enhance habitat for covered shrimp species. The habitat creation component may be achieved by creating and managing suitable vernal pool habitat in the Preserve System and/or participating in a USFWS-approved mitigation bank. If habitat is created within the Preserve System, the vernal pool acreage can be credited to the requirement for vernal pool creation in Conservation Measure 2.2.2. Soils collected as described in Conservation Measure 3.13.2 will be used to inoculate newly created pools on preserve lands with cysts of covered shrimp species.

Rationale

Impacts on covered shrimp habitat include disturbances to vernal pools and their adjacent uplands by covered activities both directly through project implementation or indirectly through human intrusion, introduced species, or

pollution caused by the project. Impacts on a single vernal pool could affect the hydrology of an entire vernal pool complex. The specified compensation ratios are based on existing mitigation standards (U.S. Fish and Wildlife Service 1996b).

[New Reference:

U.S. Fish and Wildlife Service. 1996b. *Interim survey guidelines to permittees for recovery permits under Section 10(a)(1)(A) of the Endangered Species Act for the listed vernal pool branchiopods*. April 19.]

Measures for Multiple Plant Species

The following Conservation Measures apply to all plant species or to subsets of plant species. Species-specific Conservation Measures are listed after these general plant measures.

Measure 3.17.1. Plant Salvage when Impacts are Unavoidable